GenCore version 4.5

OM protein - protein search, using sw model

Run on: February 14, 2001, 03:34:30 ; Search time 36.01 Seconds
(without alignments)
319.053 Million cell updates/sec

Title: US-09-481-990-2
Perfect score: 1753
Sequence: 1 MLQSLAGSSCVRLVERHRSA.....QNEPFVATQSSACVDGPANH 336

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

rched: 268485 seqs, 34193795 residues

Total number of hits satisfying chosen parameters: 268485

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_36:*
1: /cgn2_2/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /cgn2_2/gcgdata/geneseq/geneseqp/AA1981.DAT:*
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15: /cgn2_2/gcgdata/geneseq/geneseqp/AA1994.DAT:*
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19: /cgn2_2/gcgdata/geneseq/geneseqp/AA1998.DAT:*
20: /cgn2_2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /cgn2_2/gcgdata/geneseq/geneseqp/AA2000.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1753	100.0	336	18	W23397	TWIK-1 potassium c
2	653.5	37.3	313	20	Y34132	Human potassium ch
3	653.5	37.3	313	20	Y25116	Human hTREK-1 prot
4	653.5	37.3	313	21	Y68737	KT4, a TWIK family
5	653.5	37.3	313	21	Y68738	KT5, a TWIK family
6	379.5	21.6	398	20	Y30647	A mechanically sen
7	379.5	21.6	411	20	Y34133	Human potassium ch
8	379.5	21.6	411	20	Y28496	h-TREK1 polypeptid
9	378	21.6	393	21	Y94425	Human h-TRAAK poly
10	378	21.6	393	21	Y94426	Human h-TRAAK poly
11	376.5	21.5	370	20	Y30648	A mechanically sen
12	376.5	21.5	411	20	Y28497	Mouse h-TREK1 poly
13	359	20.5	499	21	Y94875	Human protein clon
14	320.5	18.3	394	21	Y87291	Human signal pepti
15	315	18.0	197	20	Y34126	Human potassium ch
16	239	13.6	618	17	R97984	DmORF1 potassium c
17	220	12.5	336	17	R97986	F22b7.7 potassium
18	163	9.3	107	20	Y28498	Partial h-TREK1 po
19	118.5	6.8	417	20	Y32010	Escherichia coli c
20	118.5	6.8	962	21	Y83032	Rat Eag1 potassium
21	116.5	6.6	962	21	Y49944	Human potassium io
22	116.5	6.6	989	21	Y49945	Human potassium io
23	113.5	6.5	1102	21	Y83028	Rat Elk1 potassium
24	111	6.3	1107	21	Y44907	Human potassium ch
25	110	6.3	597	20	Y32012	Paramecium tetraau
26	107	6.1	542	21	Y44905	Human potassium ch
27	98.5	5.6	843	20	Y06561	Chicken capsaicin
28	98.5	5.6	843	20	W99799	Chicken VR1 capsai
29	97.5	5.6	252	19	W74743	Human secreted pro
30	97.5	5.6	857	20	Y32019	Arabidopsis thalia
31	95.5	5.4	434	17	R92315	CORK potassium cha
32	95	5.4	858	20	Y32015	Human cation chann
33	94.5	5.4	363	16	R66934	Mouse AT2 receptor
34	94	5.4	494	17	R90765	Human K+ channel 2
35	94	5.4	494	19	W42996	Putative mature po
36	94	5.4	1017	20	Y22427	Human brain specif
37	93.5	5.3	425	20	W98019	Mouse calcium acti
38	93.5	5.3	1174	11	R08257	B.thuringiensis to
39	93.5	5.3	1174	13	R25825	Novel toxin expres
40	93.5	5.3	1174	17	R89494	B.t. toxin 81A2.
41	93.5	5.3	1174	18	W09043	Bacillus thuringie
42	92	5.2	495	20	Y33766	hKv5.1 human brain
43	91.5	5.2	461	18	W21009	H. pylori cell env
44	91.5	5.2	1159	20	Y32020	Human cation chann
45	91.5	5.2	1159	21	Y85405	Long QT syndrome a

ALIGNMENTS

RESULT 1
W23397
ID W23397 standard; Protein; 336 AA.
XX
AC W23397;
XX
DT 17-MAR-1998 (first entry)
XX
DE TWIK-1 potassium channel protein.
XX
KW TWIK-1 potassium channel; screening; diagnosis; transgenic animal;
KW Tandem of P domains in a Weak Inward rectifying K+; antibody.
XX
OS Homo sapiens.
XX
PN FR2744730-A1.
XX
PD 14-AUG-1997.
XX
PF 08-FEB-1996; 96FR-0001565.
XX
PR 08-FEB-1996; 96FR-0001565.
XX
PA (CNRS) CNRS CENT NAT RECH SCI.
XX
PI Barhanin J, Duprat F, Fink M, Guillemare E, Lazdunski M;
PI Lesage F, Romey g;
XX
DR WPI; 1997-427773/40.
DR N-PSDB; T64960.
XX
PT Nucleic acid encoding new potassium channel designated TWIK-1 -
PT useful for treating channel deficiency diseases, screening for
PT active agents and for diagnosis
XX

PS Claim 12; Figure 1b; 37pp; French.
XX
CC The present sequence represents a protein comprising a potassium channel
CC with the properties of a TWIK (Tandem of P domains in a Weak Inward
CC rectifying K+)-1 channel. This is the first member of a new family of
CC channels consisting of 4 transmembrane segments and two P domains, and
CC being only weakly rectifying. The cDNA, vectors, the cells expressing
CC TWIK-1 type channels and the protein are used to compensate
CC for deficiency of potassium channels in various tissues. Compounds
CC for modulating activity of TWIK-1 type channels may also be useful
CC therapeutically, e.g. for control of epilepsy, arrhythmia, vascular
CC disease, neurodegeneration (particularly of ischaemic or anoxic origin),
CC endocrine or muscular disorders. The cDNA and the vectors can also be
CC used to create transgenic animals (especially knock-out animals) for use
CC as models of TWIK-1 related diseases. Analysis of the sequence of the
CC TWIK-1 gene may be used for pre-natal diagnosis of disease. Antibodies
CC can be used to detect TWIK-1 channels and for inhibiting or activating
CC the channels in vivo.
XX
SQ Sequence 336 AA;

[redacted]ery Match 100.0%; Score 1753; DB 18; Length 336;
Best Local Similarity 100.0%; Pred. No. 5.2e-175;
Matches 336; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 MLQSLAGSSCVRLVERHRSAWCFGFLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLK 60
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Db       1 mlqslagsscvrlverhrsawcfgflvlgyllylvfgavvfssvelpyedllrqelrklk 60

Qy      61 RRFLEEHECLSEQQLEQFLGRVLEASNYGVSVLSNASGNWNWDFTSALFFASTVLSTTGY 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 rrfleeheclseqqleqflgrvleasnygvsvlsnasgnwnwdftsalffastvlsttgy 120

Qy     121 GHTVPLSDGGKAFCIIYSVIGIPFTLLFLTAVVQRITVHVTRRPVLYFHIRWGFSKQVVA 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 ghtvplsdggkafciiysvigipftllfltavvqritvhvtrrpvlyfhirwgfskqvva 180

Qy     181 IVHAVLLGFVTVSCFFFIPAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQK 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 ivhavllgfvtvscfffipaavfsvleddwnflesfyfcfislstiglgdyvpgegynqk 240

Qy     241 FRELYKIGITCYLLLGLIAMLVVLETFCELHELKKFRKMFYVKKDKDEDQVHIIEHDQLS 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 frelykigitcylllgliamlvvletfcelhelkkfrkmfyvkkdkdedqvhiiehdqls 300

Qy     301 FSSITDQAAGMKEDQKQNEPFVATQSSACVDGPANH 336
           ||||||||||||||||||||||||||||||||||||
Db     301 fssitdqaagmkedqkqnepfvatqssacvdgpanh 336
```

[redacted]ULT 2
Y34132
ID Y34132 standard; Protein; 313 AA.
XX
AC Y34132;
XX
DT 30-NOV-1999 (first entry)
XX
DE Human potassium channel K+Hnov49.
XX
KW Potassium channel; ataxia; arrhythmia; epilepsy; Bartter's syndrome;
KW cardiovascular disorder; CNS disorder; renal disorder.
XX
OS Homo sapiens.
XX
PN WO9943696-A1.
XX
PD 02-SEP-1999.
XX
PF 22-FEB-1999; 99WO-US03826.
XX
PR 19-JAN-1999; 99US-0116448.
PR 25-FEB-1998; 98US-0076687.
PR 07-AUG-1998; 98US-0095836.
XX
PA (AXYS-) AXYS PHARM INC.
XX
PI Curran ME, Hu P, Miller AP, Rutter M, Wang J;
XX
DR WPI; 1999-527591/44.
DR N-PSDB; Z11914.
XX
PT New nucleic acids encoding mammalian K+Hnov potassium channel
PT proteins, useful for the diagnosis and treatment of episodic ataxia
PT with myokymia, cardiac arrhythmia, epilepsy and Bartter's syndrome
XX
PS Claim 3; Page 101-102; 112pp; English.
XX
CC This sequence represents the human K+Hnov49 potassium channel.
CC K+Hnov proteins have a high degree of homology to known potassium
CC channels and may be alpha subunits, which form the functional channel, or
CC accessory subunits that act to modulate the channel activity. K+Hnov49 is
CC a 4 transmembrane domain, 2 pore domain potassium channel. The gene's
CC chromosomal location is 1q41, determined via PCR chromosomal
CC localisation using primers Z11937 and Z11938. K+Hnov cDNAs
CC were isolated by extension of expressed sequence tags (ESTs) which were
CC related but not identical to known human potassium channels. Potential
CC polymorphisms detected as sequence variants between multiple
CC independent clones. Potassium channels have critical roles in various
CC cell types and biochemical pathways. Defective potassium channels are
CC known to cause four human diseases: episodic ataxia with myokymia;
CC cardiac arrhythmia (long QT syndrome); epilepsy; and Bartter's syndrome.
CC As potassium channels are critical components of virtually all cells,
CC it is likely that abnormal potassium channels are also implicated in
CC certain renal, cardiovascular and central nervous system (CNS) disorders.
CC Nucleotides encoding K+Hnov proteins may be used for identifying
CC homologous or related proteins and the DNA sequences encoding them. They
CC may be used to produce compositions that modulate the expression and
CC function of the K+Hnov protein and in studying the biochemical pathways
CC associated with it. They may also be used for the recombinant production
CC of K+Hnov protein in fermentation cultures. Additionally, such
CC nucleotides may be used in gene therapy protocols for the treatment
CC of diseases associated with abnormal potassium channels.
XX
SQ Sequence 313 AA;

Query Match 37.3%; Score 653.5; DB 20; Length 313;
Best Local Similarity 45.3%; Pred. No. 3.2e-60;
Matches 140; Conservative 58; Mismatches 86; Indels 25; Gaps 7;

```
Qy      24 GFLVLG----YLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFL 79
           | |: |    |  ||| ||:: : :| |:|  || ||  |: : |:   |::   |: |:
Db       4 gallagalaayaaylvlgallvarlegphearlraeletlraqllqrspcvaapaldafv 63

Qy      80 GRVLEASNYGVSVLSNASGNWN-----WDFTSALFFASTVLSTTGYGHTVPLSDGGKAFC 134
            ||| |   |  ||:|||: |     ||| ||||||||:::| |||:| ||:| ||||
Db      64 ervlaagrlgrvvlanasgsanasdpawdfasalffastlittvgygyttpltdagkafs 123

Qy     135 IIYSVIGIPFTLLFLTAVVQRITVHVTRRPVLYFHIRWGFSKQVVAIVHAV-LLGFVTVS 193
           | ::::|:| |:| |||  ||::: :|  |: :  :|||:  :  |  | | ||| |
Db     124 iafallgvpttmlltasaqrlsillthvplswlsmrwgwdprraacwhlvallgvvvtv 183

Qy     194 CFFFIPAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYL 253
           | | :|| :|: ||: |:||::|||||||||||||||||||||   | :| |||: :| ||
Db     184 c-flvpavifahleeawsfldafyfcfislstiglgdyvpgeapgqpyralykvlvtvyl 242

Qy     254 LLGLIAMLVVLETFCELHELKKFRKMFYV--------KKDKDEDQVHII-----EHDQLS 300
            |||:||::||:||  : :|    ::  :          |:| |:| |:      | |||
Db     243 flglvamvlvlqtfrhvsdlhgltelillpppcpasfnaded-drvdilgpqpeshqqls 301

Qy     301 FSSITDQAA 309
           || || |:
Db     302 asshtdyas 310
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RESULT   3
Y25116
ID   Y25116 standard; Protein; 313 AA.
XX
AC   Y25116;
XX
DT   25-AUG-1999  (first entry)
XX
DE   Human hTREK-1 protein.
XX
KW   hTREK-2; Twik-1 Related K+ channel-2; vasotropic; antiinflammatory;
KW   analgesic; treatment; gene therapy; inhibitor; detection; diagnosis;
KW   disease susceptibility; cerebral; cardiac; renal; ischemia; brain;
KW   inflammation; pain; mimic; neurotransmitter; hormone; chromosome mapping;
KW   linkage analysis; mutation; immunogen; human.
XX
OS   Homo sapiens.
XX
PN   EP930364-A1.
XX
PD   21-JUL-1999.
XX
PF   16-JAN-1998;   98EP-0400072.
XX
PR   16-JAN-1998;   98EP-0400072.
XX
PA   (SYNO ) SYNTHELABO.
XX
PI   Partiseti M;
XX
DR   WPI; 1999-387707/33.
DR   N-PSDB; X78383.
XX
PT   New human polypeptides useful for diagnosing and treating cerebral
PT   and cardiac ischemias
XX
PS   Claim 1; Page 18-20; 21pp; English.
XX
CC   This invention describes a novel human Twik-1 Related K+ channel-2
CC   (hTREK-2) polypeptide (I) and its encoding nucleic acid (II) which has
CC   vasotropic, antiinflammatory and analgesic activity. (II) or agonists of
CC   (I) may be used to stimulate production of (I) in vivo to treat patients
CC   requiring enhanced activity or expression of (I). This use of (II)
CC   represents a gene therapy regime. Antagonists of (I), the complement of
CC   (II) used as an antisense construct or a polypeptide competitor of (I)
CC   may be administered to patients to inhibit activity or expression of (I).
CC   Detection of the presence or amount of (I) in a sample from a patient or
CC   detection of mutations in (I) may be used to diagnose or measure
CC   susceptibility to diseases related to altered expression or activity of
CC   (I). The diseases and conditions resulting from altered activity or
CC   expression of (I) which may be treated as above include cerebral,
CC   cardiac and renal ischemias, brain and cardiac diseases, inflammation
CC   and pain. In addition, (I), (II), and agonists and antagonists of (I)
CC   may be used to mimic or antagonize the effects of endogenous
CC   neurotransmitters and hormones. (II) or its fragments may be used as
CC   hybridization probes to isolate full length and genomic cDNAs encoding
CC   (I) or its homologues from cDNA or genomic libraries. (II) may also be
CC   used for chromosome mapping and linkage analysis to identify the
CC   relationship between genes and diseases which have been mapped to the
CC   same chromosome. In addition (II) may be used to identify mutations
CC   associated with diseases by comparing the sequence of (II) between
CC   affected and unaffected individuals. (I) or its fragments may be used as
CC   immunogens to produce antibodies against (I). Antibodies to (I) may be
CC   used to isolate or identify clones expressing (I) or to purify (I) by
CC   affinity chromatography. These antibodies may also be used to treat the
CC   above diseases as agonists or antagonists of (I).
XX
SQ   Sequence   313 AA;

  Query Match           37.3%;  Score 653.5;  DB 20;  Length 313;
  Best Local Similarity 45.3%;  Pred. No. 3.2e-60;
    Matches  140;  Conservative   58;  Mismatches   86;  Indels   25;  Gaps    7;

Qy      24 GFLVLG----YLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFL 79
           | |: |    |  ||| ||:: : :| |:|  || ||  |: : |:   |::   |: |:
Db       4 gallagalaayaaylvlgallvarlegphearlraeletlraqllqrspcvaapaldafv 63

Qy      80 GRVLEASNYGVSVLSNASGNWN-----WDFTSALFFASTVLSTTGYGHTVPLSDGGKAFC 134
             ||| |   |  ||:||||: |     ||| |||||||:::| |||:| ||:| ||||
Db      64 ervlaagrlgrvvlanasgsanasdpawdfasalffastlittvgygyttpltdagkafs 123

Qy     135 IIYSVIGIPFTLLFLTAVVQRITVHVTRRPVLYFHIRWGFSKQVVAIVHAV-LLGFVTVS 193
           | ::::|:| |:| |||  ||::: :|  |: :  :|||:  :  |  | | ||| |
Db     124 iafallgvpttmllltasaqrlsllllthvplswlsmrwgwdprraacwhlvallgvvvtv 183

Qy     194 CFFFIPAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYL 253
           | | :|| :|: ||: |:|||::|||||||||||||||||||||   | :| |||: :| ||
Db     184 c-flvpavifahleeawsfidafyfcfislstiglgdyvpgeapgqpyralykvlvtvyl 242

Qy     254 LLGLIAMLVVLETFCELHELKKFRKMFYV--------KKDKDEDQVHII-----EHDQLS 300
             |||:||::||:||  : :|    ::  :          |:| |:| |:      | |||
Db     243 flglvamvlvlqtfrhvsdlhgltelillpppcpasfnaded-drvdilgpqpeshqqls 301

Qy     301 FSSITDQAA 309
             || || |:
Db     302 asshtdyas 310


RESULT   4
Y68737
ID   Y68737 standard; Protein; 313 AA.
XX
AC   Y68737;
XX
DT   05-MAY-2000  (first entry)
XX
DE   KT4, a TWIK family 2PD potassium channel polypeptide.
XX
KW   KT4; TWIK family 2PD potassium channel polypeptide; P-domain;
KW   expressed sequence tag; EST; AA604914; ion channel dysfunction;
KW   renal disease; musculoskeletal disease; proliferative disease;
KW   renal failure; nephrosis; cirrhosis; dysphagia; gastritis; myotonia;
KW   muscular dystrophy; atherosclerosis; cancer.
XX
OS   Homo sapiens.
XX
PN   WO200003687-A2.
XX
PD   27-JAN-2000.
XX
PF   20-JUL-1999;   99WO-US16471.
XX
PR   20-JUL-1998;   98US-0093486.
PR   13-AUG-1998;   98US-0096655.
XX
PA   (ELAN-) ELAN PHARM INC.
XX
PI   Forsayeth JR,  Zhao BB,  Chavez RA;
XX
DR   WPI; 2000-171196/15.
DR   N-PSDB; Z46092.
XX
PT   Novel human potassium channel polynucleotides and polypeptides used in
PT   the diagnosis, prevention and treatment of diseases including renal
PT   failure, cirrhosis, muscular dystrophy and cancers -
XX
PS   Claim 4; Fig 1A-C; 53pp; English.
XX
CC   The present sequence represents a protein, designated KT4, which is a
CC   member of the TWIK family 2PD potassium channel polypeptides. These
CC   polypeptides contain two potential P-domains and 8 (preferably 4)
CC   transmembrane domains. The KT4 cDNA sequence was isolated from a brain
CC   cDNA library using degenerate oligonucleotides derived from human
CC   expressed sequence tag (EST) AA604914. The polypeptides and
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CC   polynucleotides are used in the diagnosis, prevention and treatment of
CC   disease states. The polynucleotides may be used to detect and
CC   quantitate expression of TWIK family 2PD potassium channels, and
CC   aberrant or mutant forms of the polynucleotide which cause various
CC   diseases and disorders. Antisense oligonucleotides may be used to
CC   modulate the expression of polynucleotides of the invention. The
CC   polypeptides are used for treating diseases and disorders associated
CC   with ion channel dysfunction, including renal, musculoskeletal and
CC   proliferative diseases, e.g. renal failure, nephrosis, cirrhosis,
CC   dysphagia, gastritis, myotonias, muscular dystrophy, atherosclerosis
CC   and cancers.
XX
SQ   Sequence   313 AA;


  Query Match             37.3%;  Score 653.5;  DB 21;  Length 313;
  Best Local Similarity   45.3%;  Pred. No. 3.2e-60;
  Matches  140;  Conservative   58;  Mismatches   86;  Indels   25;  Gaps    7;

Qy      24 GFLVLG----YLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFL 79
           | |: |    |  ||| ||:: : :| |:|  || ||  |: : |:   |::   |: |:
Db       4 gallagalaayaaylvlgallvarlegphearlraeletlraqllqrspcvaapaldafv 63

Qy      80 GRVLEASNYGVSVLSNASGNWN-----WDFTSALFFASTVLSTTGYGHTVPLSDGGKAFC 134
             ||| |   |  ||:||||: |     ||| ||||||||:::| |||:| ||:| ||||
Db      64 ervlaagrlgrvvlanasgsanasdpawdfasalffastlittvgygyttpltdagkafs 123

Qy     135 IIYSVIGIPFTLLFLTAVVQRITVHVTRRPVLYFHIRWGFSKQVVAIVHAV-LLGFVTVS 193
           | ::::|:| |:| |||  ||::: :|  |: :  :|||:  :  |  | | ||| |
Db     124 iafallgvpttmlllтasaqrlslllthvplswlsmrwgwdprraacwhlvallgvvvtv 183

Qy     194 CFFFIPAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYL 253
           | | :|| :|: ||: |:||::|||||||||||||||||||||   | :| |||: :| ||
Db     184 c-flvpavifahleeawsfldafyfcfislstiglgdyvpgeapgqpyralykvlvtvyl 242

Qy     254 LLGLIAMLVVLETFCELHELKKFRKMFYV--------KKDKDEDQVHII-----EHDQLS 300
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Db     243 flglvamvlvlqtfrhvsdlhgltelillpppcpasfnaded-drvdilgpqpeshqqls 301

Qy     301 FSSITDQAA 309
           || || |:
Db     302 asshtdyas 310


RESULT   5
Y68738
ID   Y68738 standard; Protein; 313 AA.
XX
AC   Y68738;

     05-MAY-2000  (first entry)

DE   KT5, a TWIK family 2PD potassium channel polypeptide.
XX
KW   KT5; TWIK family 2PD potassium channel polypeptide; P-domain;
KW   expressed sequence tag; EST; AA533124; ion channel dysfunction;
KW   renal disease; musculoskeletal disease; proliferative disease;
KW   renal failure; nephrosis; cirrhosis; dysphagia; gastritis; myotonia;
KW   muscular dystrophy; atherosclerosis; cancer.
XX
OS   Homo sapiens.
XX
PN   WO200003687-A2.
XX
PD   27-JAN-2000.
XX
PF   20-JUL-1999;   99WO-US16471.
XX
PR   20-JUL-1998;   98US-0093486.
PR   13-AUG-1998;   98US-0096655.
XX
PA   (ELAN-) ELAN PHARM INC.
XX
PI   Forsayeth JR,  Zhao BB,  Chavez RA;
XX
DR   WPI; 2000-171196/15.
DR   N-PSDB; Z46094.
XX
PT   Novel human potassium channel polynucleotides and polypeptides used in
PT   the diagnosis, prevention and treatment of diseases including renal
PT   failure, cirrhosis, muscular dystrophy and cancers -
XX
PS   Claim 7; Fig 3A-C; 53pp; English.
XX
CC   The present sequence represents a protein, designated KT5, which is a
CC   member of the TWIK family 2PD potassium channel polypeptides. These
CC   polypeptides contain two potential P-domains and 8 (preferably 4)
CC   transmembrane domains. The KT4 cDNA sequence was isolated from a brain
CC   cDNA library using degenerate oligonucleotides derived from human
CC   expressed sequence tag (EST) AA533124. The polypeptides and
CC   polynucleotides are used in the diagnosis, prevention and treatment of
CC   disease states. The polynucleotides may be used to detect and
CC   quantitate expression of TWIK family 2PD potassium channels, and
CC   aberrant or mutant forms of the polynucleotide which cause various
CC   diseases and disorders. Antisense oligonucleotides may be used to
CC   modulate the expression of polynucleotides of the invention. The
CC   polypeptides are used for treating diseases and disorders associated
CC   with ion channel dysfunction, including renal, musculoskeletal and
CC   proliferative diseases, e.g. renal failure, nephrosis, cirrhosis,
CC   dysphagia, gastritis, myotonias, muscular dystrophy, atherosclerosis
CC   and cancers.
XX
SQ   Sequence   313 AA;


  Query Match             37.3%;  Score 653.5;  DB 21;  Length 313;
  Best Local Similarity   45.3%;  Pred. No. 3.2e-60;
  Matches  140;  Conservative   58;  Mismatches   86;  Indels   25;  Gaps    7;

Qy      24 GFLVLG----YLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFL 79
           | |: |    |  ||| ||:: : :| |:|  || ||  |: : |:   |::   |: |:
Db       4 gallagalaayaaylvlgallvarlegphearlraeletlraqllqrspcvaapaldafv 63

Qy      80 GRVLEASNYGVSVLSNASGNWN-----WDFTSALFFASTVLSTTGYGHTVPLSDGGKAFC 134
             ||| |   |  ||:||||: |     ||| ||||||||:::| |||:| ||:| ||||
Db      64 ervlaagrlgrvvlanasgsanasdpawdfasalffastlittvgygyttpltdagkafs 123

Qy     135 IIYSVIGIPFTLLFLTAVVQRITVHVTRRPVLYFHIRWGFSKQVVAIVHAV-LLGFVTVS 193
           | ::::|:| |:| |||  ||::: :|  |: :  :|||:  :  |  | | ||| |
Db     124 iafallgvpttmlllтasaqrlslllthvplswlsmrwgwdprraacwhlvallgvvvtv 183

Qy     194 CFFFIPAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYL 253
           | | :|| :|: ||: |:||::|||||||||||||||||||||   | :| |||: :| ||
Db     184 c-flvpavifahleeawsfldafyfcfislstiglgdyvpgeapgqpyralykvlvtvyl 242

Qy     254 LLGLIAMLVVLETFCELHELKKFRKMFYV--------KKDKDEDQVHII-----EHDQLS 300
           |||:||::||:||  : :|    ::  :          |:| |:| |:      | |||
Db     243 flglvamvlvlqtfrhvsdlhgltelillpppcpasfnaded-drvdilgpqpeshqqls 301

Qy     301 FSSITDQAA 309
           || || |:
Db     302 asshtdyas 310


RESULT   6
Y30647
ID   Y30647 standard; Protein; 398 AA.
XX
AC   Y30647;
XX
DT   18-NOV-1999  (first entry)
XX
DE   A mechanically sensitive potassium channel protein TRAAK.
XX
KW   Mechanically sensitive potassium channel protein; TRAAK;
KW   polyunsaturated fatty acid; arachidonic acid; riluzole; heart disease;
```

```
KW   nervous system disease; epilepsy; cardiovascular disease; arrhythmia;
KW   neurodegeneration; ischemia; anoxia; hormone secretion abnormality;
KW   muscular disease.
XX
OS   Mus sp.
XX
PN   WO9945108-A2.
XX
PD   10-SEP-1999.
XX
PF   23-FEB-1999;   99WO-FR00404.
XX
PR   05-MAR-1998;   98FR-0002725.
XX
PA   (CNRS ) CNRS CENT NAT RECH SCI.
XX
PI   Honore E,  Fink M,  Lazdunski M,  Lesage F,  Duprat F;

     WPI; 1999-551038/46.
     N-PSDB; Z10606.
XX
PT   New mechanically sensitive potassium channel, used to screen for
PT   specific modulators, potential therapeutic agents for heart and nervous
PT   system disorders -
XX
PS   Claim 2; Fig 1; 40pp; French.
XX
CC   The present sequence represents a mechanically sensitive potassium
CC   channel protein designated TRAAK. The protein is activated by
CC   polyunsaturated fatty acids, particularly arachidonic acid, and by
CC   riluzole. The protein is used to screen for specific modulators which
CC   are useful for treating or preventing diseases of the heart and nervous
CC   systems in humans and animals, e.g. epilepsy, cardiovascular disease
CC   (arrhythmia), neurodegeneration (particularly where associated with
CC   ischemia or anoxia), abnormalities of hormone secretion and muscular
CC   disease. The protein itself may be used to treat these diseases.
CC   Antibodies specific for the protein are used to detect it in tissues,
CC   also as therapeutic inhibitors or activators.
XX
SQ   Sequence   398 AA;


  Query Match             21.6%;  Score 379.5;  DB 20;  Length 398;
  Best Local Similarity   34.4%;  Pred. No. 1.9e-31;
  Matches   90;  Conservative   54;  Mismatches   95;  Indels   23;  Gaps    9;

       18 RSAWCFGFLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQ 77
          ||      | |  ||||| ||:|| ::| |:|   ::::   : :|| :| |:|:: ||
Db      2 rsttllallal-vllylvsgalvfqaleqpheqqaqkkmdhgrdqflrdhpcvsqksled 60

Qy      78 FLGRVLEASNYGVSVLSNASGNWN--------WDFTSALFFASTVLSTTGYGHTVPLSDG 129
           |:  ::||   |    :|   :|         |:  || ||: |:::| |||: |  :|
Db      61 fikllvealggg----anpetswtnssnhssawnlgsafffsgtiittigygnivlhtda 116

Qy     130 GKAFCIIYSVIGIPFTLLFLTAVVQRITVHVTRRPVLYFH---IRWGFSKQVVAIVHAVL 186
           |: ||| |:::|||   : |  |  |:   : || : :     ::|     :|  : |||
Db     117 grlfcifyalvgiplfgmllagvgdrlgssl-rrgighieaiflkwhvppglvrslsavl 175

Qy     187 LGFVTVSCFFFI--PAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFREL 244
             |: : |  |:  |  ||| :|  |: ||: ||  ::|:|:| ||||||:|  |
Db     176 --flligcllfvltptfvfsyme-swskleaiyfvivtlttvgfgdyvpgdgtgqn-spa 231

Qy     245 YKIGITCYLLLGLIAMLVVLET 266
           |:  :  ::| ||     || |
Db     232 yqplvwfwilfglayfasvltt 253


RESULT   7
Y34133
ID   Y34133 standard; Protein; 411 AA.
XX
AC   Y34133;
XX
DT   30-NOV-1999  (first entry)
XX
DE   Human potassium channel K+Hnov59.
XX
KW   Potassium channel; ataxia; arrhythmia; epilepsy; Bartter's syndrome;
KW   cardiovascular disorder; CNS disorder; renal disorder.
XX
OS   Homo sapiens.
XX
PN   WO9943696-A1.
XX
PD   02-SEP-1999.
XX
PF   22-FEB-1999;   99WO-US03826.
XX
PR   19-JAN-1999;   99US-0116448.
PR   25-FEB-1998;   98US-0076687.
PR   07-AUG-1998;   98US-0095836.
XX
PA   (AXYS-) AXYS PHARM INC.
XX
PI   Curran ME,  Hu P,  Miller AP,  Rutter M,  Wang J;
XX
DR   WPI; 1999-527591/44.
DR   N-PSDB; Z11915.
XX
PT   New nucleic acids encoding mammalian K+Hnov potassium channel
PT   proteins, useful for the diagnosis and treatment of episodic ataxia
PT   with myokymia, cardiac arrhythmia, epilepsy and Bartter's syndrome
XX
PS   Claim 3; Page 104-105; 112pp; English.
XX
CC   This sequence represents the human K+Hnov59 potassium channel.
CC   K+Hnov proteins have a high degree of homology to known potassium
CC   channels and may be alpha subunits, which form the functional channel, or
CC   accessory subunits that act to modulate the channel activity. K+Hnov59 is
CC   a 4 transmembrane domain, 2 pore domain potassium channel. The gene is
CC   located on chromosome 19, determined via PCR chromosomal
CC   localisation using primers Z11939 and Z11940. K+Hnov cDNAs
CC   were isolated by extension of expressed sequence tags (ESTs) which were
CC   related but not identical to known human potassium channels. Potential
CC   polymorphisms detected as sequence variants between multiple
CC   independent clones. Potassium channels have critical roles in various
CC   cell types and biochemical pathways. Defective potassium channels are
CC   known to cause four human diseases: episodic ataxia with myokymia;
CC   cardiac arrhythmia (long QT syndrome); epilepsy; and Bartter's syndrome.
CC   As potassium channels are critical components of virtually all cells,
CC   it is likely that abnormal potassium channels are also implicated in
CC   certain renal, cardiovascular and central nervous system (CNS) disorders.
CC   Nucleotides encoding K+Hnov proteins may be used for identifying
CC   homologous or related proteins and the DNA sequences encoding them. They
CC   may be used to produce compositions that modulate the expression and
CC   function of the K+Hnov protein and in studying the biochemical pathways
CC   associated with it. They may also be used for the recombinant production
CC   of K+Hnov protein in fermentation cultures. Additionally, such
CC   nucleotides may be used in gene therapy protocols for the treatment
CC   of diseases associated with abnormal potassium channels.
XX
SQ   Sequence   411 AA;


  Query Match             21.6%;  Score 379.5;  DB 20;  Length 411;
  Best Local Similarity   32.5%;  Pred. No. 1.9e-31;
  Matches   90;  Conservative   62;  Mismatches  108;  Indels   17;  Gaps    9;

Qy      25 FLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFLGRVLE 84
           |||:  :|||: || || ::| |:|   |  :   |: |: :| |::  :|:: : :::
Db      51 flvv--vlyliigatvfkaleqpheisqrttiviqkqtfisqhscvnsteldeliqqiva 108

Qy      85 ASNYGVSVLSNASGN-WNWDFTSALFFASTVLSTTGYGHTVPLSDGGKAFCIIYSVIGIP 143
           | | |:  | | |    :||  |: ||| ||::| |:|:  | ::||| |||||:::|||
Db     109 ainagiiplgntsnqishwdlgssfffagtvittigfgnisprteggkifciiyallgip 168
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Qy     144 FTLLFLTAVVQRITVHVTR--RPVLYFHIRWGFSKQVVAIVHAVLLGFVTVSCFFFI--P 199
Db     169 lfgfllagvgdqlgtifgkgiakvedtfikwnvsqtkiriistii--filfgcvlfvalp 226

Qy     200 AAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYLLLGLIA 259
Db     227 aiifkhie-gwsaldaiyfvvitlttigfgdyvag-gsdieyldfykpvvwfwilvglay 284

Qy     260 MLVVLETFCE-LHELKKFRKMFYVKKDKDEDQVHIIE 295
Db     285 faavlsmigdwlrvisk-----ktkeevgefrahaae 316
```

RESULT 8
Y28496
ID Y28496 standard; Protein; 411 AA.
XX
AC Y28496;
XX
DT 12-OCT-1999 (first entry)
XX
DE h-TREK1 polypeptide.
XX
KW h-TREK1; two pore potassium channel; inflammatory disease;
KW chromosome 1q32.
XX
OS Homo sapiens.
XX
PN WO9937762-A1.
XX
PD 29-JUL-1999.
XX
PF 02-DEC-1998; 98WO-EP07805.
XX
PR 09-OCT-1998; 98GB-0022135.
PR 27-JAN-1998; 98EP-0300570.
XX
PA (SMIK) SMITHKLINE BEECHAM PLC.
XX
PI Chapman CG, Meadows HJ;
XX
DR WPI; 1999-469126/39.
DR N-PSDB; Z00039.
XX
PT New two pore potassium channel used for, e.g. treatment of cancer,
PT pulmonary, cardiovascular and inflammatory diseases
XX
PS Claim 3; Page 24; 44pp; English.
XX
CC This sequence is the h-TREK1 polypeptide, encoded by the h-TREK1
CC polynucleotide Z00039. h-TREK1 is a two pore potassium channel, and the
CC gene maps to human chromosome 1q32, between the markers D1S237 and
CC WI5105. The polynucleotide sequence of h-TREK1 can be used to diagnose a
CC disease or susceptibility to a disease related to expression or activity
CC of h-TREK-1 polypeptides. The methods of diagnosis may be used in the
CC treatment of diseases including cancer, pulmonary, cardiovascular, and
CC inflammatory diseases, pain, psychiatric disorders including depression
CC and schizophrenia, neurodegenerative diseases including Alzheimer's,
CC stroke, and head trauma and neurological disorders including migraine.
XX
SQ Sequence 411 AA;

Query Match 21.6%; Score 379.5; DB 20; Length 411;
Best Local Similarity 32.5%; Pred. No. 1.9e-31;
Matches 90; Conservative 62; Mismatches 108; Indels 17; Gaps 9;

```
Qy      25 FLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFLGRVLE 84
Db      51 flvv--vlyliigatvfkaleqpheisqrttiviqkqtfisqhscvnsteldeliqqiva 108

Qy      85 ASNYGVSVLSNASGN-WNWDFTSALFFASTVLSTTGYGHTVPLSDGGKAFCIIYSVIGIP 143
```

```
Db     109 ainagiiplgntsnqishwdlgssfffagtvittigfgnisprteggkifciiyallgip 168

Qy     144 FTLLFLTAVVQRITVHVTR--RPVLYFHIRWGFSKQVVAIVHAVLLGFVTVSCFFFI--P 199
Db     169 lfgfllagvgdqlgtifgkgiakvedtfikwnvsqtkiriistii--filfgcvlfvalp 226

Qy     200 AAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYLLLGLIA 259
Db     227 aiifkhie-gwsaldaiyfvvitlttigfgdyvag-gsdieyldfykpvvwfwilvglay 284

Qy     260 MLVVLETFCE-LHELKKFRKMFYVKKDKDEDQVHIIE 295
Db     285 faavlsmigdwlrvisk-----ktkeevgefrahaae 316
```

RESULT 9
Y94425
ID Y94425 standard; Protein; 393 AA.
XX
AC Y94425;
XX
DT 04-AUG-2000 (first entry)
XX
DE Human h-TRAAK polypeptide #1.
XX
KW Human; h-TRAAK; potassium channel polypeptide;
KW 2P domain potassium channel; neurodegenerative disease; stroke;
KW psychiatric disorder; neurological disorder; Gene therapy.
XX
OS Homo sapiens.
XX
PN WO200026253-A1.
XX
PD 11-MAY-2000.
XX
PF 03-NOV-1999; 99WO-GB03634.
XX
PR 03-NOV-1998; 98GB-0024048.
PR 07-OCT-1999; 99GB-0023668.
XX
PA (SMIK) SMITHKLINE BEECHAM PLC.
XX
PI Chapman CG, Duckworth DM;
XX
DR WPI; 2000-365583/31.
DR N-PSDB; A27105.
XX
PT Novel isolated h-TRAAK polypeptides belonging to the potassium channel
PT family of polypeptides, useful for the diagnosis and treatment of
PT h-TRAAK related disorders,e.g. depression and schizophrenia -
XX
PS Claim 3; Page 21; 35pp; English.
XX
CC Functional genomics was used to identify h-TRAAK polypeptides and
CC h-TRAAK polynucleotides from human tissue samples. h-TRAAK
CC polypeptides have homology to the 2P domain potassium channel family of
CC polypeptides. The h-TRAAK polypeptides and polynucleotides may
CC be used in diagnostic assays for conditions related to h-TRAAK
CC imbalance and for identifying agonists and antagonists of h-TRAAK
CC polypeptides. The h-TRAAK polypeptides and polynucleotides may also
CC be useful for treatment and prevention (e.g. as vaccines) of certain
CC diseases, such as pain, psychiatric disorders including depression and
CC schizophrenia, neurodegenerative disease including Alzheimer's, stroke
CC and head trauma and neurological disorders including migraine and
CC epilepsy. The present sequence is human h-TRAAK protein #1.
XX
SQ Sequence 393 AA;

Query Match 21.6%; Score 378; DB 21; Length 393;
Best Local Similarity 33.7%; Pred. No. 2.6e-31;
Matches 88; Conservative 53; Mismatches 98; Indels 22; Gaps 8;

```
Qy      18 RSAWCFGFLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQ 77
           ||      | |  ||||| ||:|| ::| |:|   ::|| ::: :||  | |:|:|:|
Db       2 rsttllallal-vllylvsgalvfraleqpheqqaqrelgevrekflrahpcvsdqelgl 60

Qy      78 FLGRVLEASNYGVSVLSNASGNWN---WDFTSALFFASTVLSITGYGHTVPLSDGGKAFC 134
           :  | :|   |    :|:: | :   ||  || ||: |:::| |||:    :| |: ||
Db      61 likevadalgggadpetnstsnsshsawdlgsafffsgtiittigygnvalrtdagrlfc 120

Qy     135 IIYSVIGIPFTLLFLTAVVQRI-------TVHVTRRPVLYFHIRWGFSKQVVAIVHAVLL 187
           | |:::|||   : |  |  |:         |:         ::|    ::| :: |:|
Db     121 ifyalvgiplfgillagvgdrlgsslrhgighiea-----iflkwhvppelvrvlsaml- 174

Qy     188 GFVTVSCFFFI--PAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELY 245
           |: : |  |:  |  ||  :| ||: ||: ||  ::|:|:| |||| |    |     |
Db     175 -flligcllfvltptfvfcyme-dwskleaiyfvivtlttvgfgdyvagadprqd-spay 231

Qy     246 KIGITCYLLLGLIAMLVVLET 266
           :  :  ::||||     || |
Db     232 qplvwfwillglayfasvltt 252
```

RESULT 10
Y94426
ID Y94426 standard; Protein; 393 AA.
XX
AC Y94426;
XX
DT 04-AUG-2000 (first entry)
XX
DE Human h-TRAAK polypeptide #2.
XX
KW Human; h-TRAAK; potassium channel polypeptide;
KW 2P domain potassium channel; neurodegenerative disease; stroke;
KW psychiatric disorder; neurological disorder; Gene therapy.
XX
OS Homo sapiens.
XX
PN WO200026253-A1.
XX
PD 11-MAY-2000.
XX
PF 03-NOV-1999; 99WO-GB03634.
XX
PR 03-NOV-1998; 98GB-0024048.
PR 07-OCT-1999; 99GB-0023668.
XX
PA (SMIK) SMITHKLINE BEECHAM PLC.
XX
PI Chapman CG, Duckworth DM;
XX
DR WPI; 2000-365583/31.
DR N-PSDB; A27106.
XX
PT Novel isolated h-TRAAK polypeptides belonging to the potassium channel
PT family of polypeptides, useful for the diagnosis and treatment of
PT h-TRAAK related disorders,e.g. depression and schizophrenia -
XX
PS Claim 12; Pages 21 and 22; 35pp; English.
XX
CC Functional genomics was used to identify h-TRAAK polypeptides and
CC h-TRAAK polynucleotides from human tissue samples. h-TRAAK
CC polypeptides have homology to the 2P domain potassium channel family of
CC polypeptides. The h-TRAAK polypeptides and polynucleotides may
CC be used in diagnostic assays for conditions related to h-TRAAK
CC imbalance and for identifying agonists and antagonists of h-TRAAK
CC polypeptides. The h-TRAAK polypeptides and polynucleotides may also
CC be useful for treatment and prevention (e.g. as vaccines) of certain
CC diseases, such as pain, psychiatric disorders including depression and
CC schizophrenia, neurodegenerative disease including Alzheimer's, stroke
CC and head trauma and neurological disorders including migraine and
CC epilepsy. The present sequence is human h-TRAAK protein #2.
XX
SQ Sequence 393 AA;

Query Match 21.6%; Score 378; DB 21; Length 393;
Best Local Similarity 33.7%; Pred. No. 2.6e-31;
Matches 88; Conservative 53; Mismatches 98; Indels 22; Gaps 8;

```
Qy      18 RSAWCFGFLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQ 77
           ||      | |  ||||| ||:|| ::| |:|   ::|| ::: :||  | |:|:|:|
Db       2 rsttllallal-vllylvsgalvfraleqpheqqaqrelgevrekflrahpcvsdqelgl 60

Qy      78 FLGRVLEASNYGVSVLSNASGNWN---WDFTSALFFASTVLSTTGYGHTVPLSDGGKAFC 134
           :  | :|   |    :|:: | :   ||  || ||: |:::| |||:    :| |: ||
Db      61 likevadalgggadpetnstsnsshsawdlgsafffsgtiittigygnvalrtdagrlfc 120

Qy     135 IIYSVIGIPFTLLFLTAVVQRI-------TVHVTRRPVLYFHIRWGFSKQVVAIVHAVLL 187
           | |:::|||   : |  |  |:         |:         ::|    ::| :: |:|
Db     121 ifyalvgiplfgillagvgdrlgsslrhgighiea-----iflkwhvppelvrvlsaml- 174

Qy     188 GFVTVSCFFFI--PAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELY 245
           |: : |  |:  |  ||  :| ||: ||: ||  ::|:|:| |||| |    |     |
Db     175 -flligcllfvltptfvfcyme-dwskleaiyfvivtlttvgfgdyvagadprqd-spay 231

Qy     246 KIGITCYLLLGLIAMLVVLET 266
           :  :  ::||||     || |
Db     232 qplvwfwillglayfasvltt 252
```

RESULT 11
Y30648
ID Y30648 standard; Protein; 370 AA.
XX
AC Y30648;
XX
DT 18-NOV-1999 (first entry)
XX
DE A mechanically sensitive potassium channel protein TREK-1.
XX
KW Mechanically sensitive potassium channel protein; TREK-1;
KW polyunsaturated fatty acid; arachidonic acid; riluzole; heart disease;
KW nervous system disease; epilepsy; cardiovascular disease; arrhythmia;
KW neurodegeneration; ischemia; anoxia; hormone secretion abnormality;
KW muscular disease.
XX
OS Mus sp.
XX
PN WO9945108-A2.
XX
PD 10-SEP-1999.
XX
PF 23-FEB-1999; 99WO-FR00404.
XX
PR 05-MAR-1998; 98FR-0002725.
XX
PA (CNRS) CNRS CENT NAT RECH SCI.
XX
PI Honore E, Fink M, Lazdunski M, Lesage F, Duprat F;
XX
DR WPI; 1999-551038/46.
DR N-PSDB; Z10607.
XX
PT New mechanically sensitive potassium channel, used to screen for
PT specific modulators, potential therapeutic agents for heart and nervous
PT system disorders -
XX
PS Claim 3; Page 23-25; 40pp; French.
XX
CC The present sequence represents a mechanically sensitive potassium
CC channel protein designated TREK-1. The protein is activated by
CC polyunsaturated fatty acids, particularly arachidonic acid, and by
CC riluzole. The protein is used to screen for specific modulators which
CC are useful for treating or preventing diseases of the heart and nervous
CC systems in humans and animals, e.g. epilepsy, cardiovascular disease
CC (arrhythmia), neurodegeneration (particularly where associated with

```
CC   ischemia or anoxia), abnormalities of hormone secretion and muscular
CC   disease. The protein itself may be used to treat these diseases.
CC   Antibodies specific for the protein are used to detect it in tissues,
CC   also as therapeutic inhibitors or activators.
XX
SQ   Sequence   370 AA;


  Query Match            21.5%;  Score 376.5;  DB 20;  Length 370;
  Best Local Similarity  32.5%;  Pred. No. 3.5e-31;
  Matches   90;  Conservative   62;  Mismatches  108;  Indels   17;  Gaps    9;

Qy      25 FLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFLGRVLE 84
           |||:  :|||: || || ::| | |   |  :   |: |: :| |::  :|:: : :::
Db      51 flvv--vlyliigaavfkaleqpqeisqrttiviqkqtfiaqhacvnsteldeliqqiva 108

Qy      85 ASNYGVSVLSNASGN-WNWDFTSALFFASTVLSTTGYGHTVPLSDGGKAFCIIYSVIGIP 143
           | | |:  | |:|    :||  |: ||| ||::| |:|:  | ::||| ||||:::|||
Db     109 ainagiiplgnssnqvshwdlgssfffagtvittigfgnisprteggkifciiyallgip 168

Qy     144 FTLLFLTAVVQRITVHVTR--RPVLYFHIRWGFSKQVVAIVHAVLLGFVTVSCFFFI--P 199
           |  |  ::    :   |   |:|  |:  : |:  ::  |:   |  |:  |
Db     169 lfgfllagvgdqlgtifgkgiakvedtfikwnvsqtkiriistii--filfgcvlfvalp 226

Qy     200 AAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYLLLGLIA 259
           | :|  :|  |: |:: ||  |:|:||| |||| | | : :: : ||  :  ::|:||
Db     227 avifkhie-gwsaldaiyfvvitlttigfgdyvag-gsdieyldfykpvvwfwilvglay 284

Qy     260 MLVVLETFCE-LHELKKFRKMFYVKKDKDEDQVHIIE 295
             ||    : |  : |       |::  | : |  |
Db     285 faavlsmigdwlrvisk-----ktkeevgefrahaae 316


RESULT  12
Y28497
ID   Y28497 standard; Protein; 411 AA.
XX
AC   Y28497;
XX
DT   12-OCT-1999  (first entry)
XX
DE   Mouse h-TREK1 polypeptide.
XX
KW   h-TREK1; two pore potassium channel; inflammatory disease;
KW   chromosome 1q32.
XX
OS   Mus musculus.
XX
PN   WO9937762-A1.

     29-JUL-1999.

PF   02-DEC-1998;   98WO-EP07805.
XX
PR   09-OCT-1998;   98GB-0022135.
PR   27-JAN-1998;   98EP-0300570.
XX
PA   (SMIK ) SMITHKLINE BEECHAM PLC.
XX
PI   Chapman CG,  Meadows HJ;
XX
DR   WPI; 1999-469126/39.
DR   N-PSDB; Z00040.
XX
PT   New two pore potassium channel used for, e.g.  treatment of cancer,
PT   pulmonary, cardiovascular and inflammatory diseases
XX
PS   Claim 3; Page 26; 44pp; English.
XX
CC   This sequence is the mouse h-TREK1 polypeptide, encoded by the h-TREK1
CC   polynucleotide Z00040. h-TREK1 is a two pore potassium channel.
CC   The polynucleotide sequence of h-TREK1 can be used to diagnose a
CC   disease or susceptibility to a disease related to expression or activity
CC   of h-TREK-1 polypeptides. The methods of diagnosis may be used in the
CC   treatment of diseases including cancer, pulmonary, cardiovascular, and
CC   inflammatory diseases, pain, psychiatric disorders including depression
CC   and schizophrenia, neurodegenerative diseases including Alzheimer's,
CC   stroke, and head trauma and neurological disorders including migraine.
XX
SQ   Sequence   411 AA;


  Query Match            21.5%;  Score 376.5;  DB 20;  Length 411;
  Best Local Similarity  32.5%;  Pred. No. 4e-31;
  Matches   90;  Conservative   62;  Mismatches  108;  Indels   17;  Gaps    9;

Qy      25 FLVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFLGRVLE 84
           |||:  :|||: || || ::| | |   |  :   |: |: :| |::  :|:: : :::
Db      51 flvv--vlyliigaavfkaleqpqeisqrttiviqkqtfiaqhacvnsteldeliqqiva 108

Qy      85 ASNYGVSVLSNASGN-WNWDFTSALFFASTVLSTTGYGHTVPLSDGGKAFCIIYSVIGIP 143
           | | |:  | |:|    :||  |: ||| ||::| |:|:  | ::||| ||||:::|||
Db     109 ainagiiplgnssnqvshwdlgssfffagtvittigfgnisprteggkifciiyallgip 168

Qy     144 FTLLFLTAVVQRITVHVTR--RPVLYFHIRWGFSKQVVAIVHAVLLGFVTVSCFFFI--P 199
           |  |  ::    :   |   |:|  |:  : |:  ::  |:   |  |:  |
Db     169 lfgfllagvgdqlgtifgkgiakvedtfikwnvsqtkiriistii--filfgcvlfvalp 226

Qy     200 AAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIGITCYLLLGLIA 259
           | :|  :|  |: |:: ||  |:|:||| |||| | | : :: : ||  :  ::|:||
Db     227 avifkhie-gwsaldaiyfvvitlttigfgdyvag-gsdieyldfykpvvwfwilvglay 284

Qy     260 MLVVLETFCE-LHELKKFRKMFYVKKDKDEDQVHIIE 295
             ||    : |  : |       |::  | : |  |
Db     285 faavlsmigdwlrvisk-----ktkeevgefrahaae 316


RESULT  13
Y94875
ID   Y94875 standard; Protein; 499 AA.
XX
AC   Y94875;
XX
DT   12-JUN-2000  (first entry)
XX
DE   Human protein clone HP10538.
XX
KW   Human protein; hydrophobic domain; nutritional source; haematopoiesis;
KW   cytokine production; cell proliferation; cell differentiation;
KW   immune deficiency; infectious disease; autoimmune disorder; asthma;
KW   multiple sclerosis; systemic lupus erythematosus; rheumatoid arthritis;
KW   allergic reaction; osteoporosis; osteoarthritis; periodontal disease;
KW   nervous system disorder; Alzheimer's disease; Parkinson's disease;
KW   Huntington's disease; liver fibrosis; lung fibrosis; reperfusion injury;
KW   systemic cytokine damage; tissue differentiation; contraceptive; stroke;
KW   coagulation disorder; myocardial infarction; inflammatory condition;
KW   septic shock; sepsis; ischaemia; reperfusion injury; arthritis; tumour;
KW   nephritis; therapy.
XX
OS   Homo sapiens.
XX
PN   WO200005367-A2.
XX
PD   03-FEB-2000.
XX
PF   22-JUL-1999;   99WO-JP03929.
XX
PR   24-JUL-1998;   98JP-0208820.
PR   07-AUG-1998;   98JP-0224105.
PR   25-AUG-1998;   98JP-0238116.
PR   09-SEP-1998;   98JP-0254736.
PR   29-SEP-1998;   98JP-0275505.
XX
PA   (SAGA ) SAGAMI CHEM RES CENT.
PA   (PROT-) PROTEGENE INC.
XX
```

PI Kato S, Kimura T;
XX
DR WPI; 2000-182694/16.
XX
PT Novel human proteins having hydrophobic domains useful for treating
PT osteoporosis, Alzheimer's disease, Parkinson's disease, asthma,
PT multiple sclerosis, rheumatoid arthritis, cancer, anaemia, and stroke -
XX
PS Claim 1; Page 245-247; 351pp; English.
XX
CC This sequence represents a human protein of the invention, which has
CC hydrophobic domains. The DNA sequences can be used as a probe or as a
CC genetic marker. The protein can also be used as a marker, and to identify
CC potential genetic disorders. The DNA and protein can also be used as
CC nutritional sources or supplements. The protein exhibits cytokine, cell
CC proliferation, cell differentiation activities and induces production of
CC other cytokines in certain cell populations. The protein also exhibits
immune stimulating or immune suppressing activity. It can be used in the
treatment of various immune deficiencies and disorders, and to treat
infectious diseases caused by viral, bacterial, fungal or other
CC infections. The protein is also used for treating autoimmune disorders
CC such as multiple sclerosis, systemic lupus erythematosus, and rheumatoid
CC arthritis. It is also useful in the treatment of allergic reactions and
CC conditions such as asthma, and in immune suppression after organ
CC transplantation. The protein is useful in regulation of haematopoiesis
CC and consequently in the treatment of myeloid or lymphoid cell
CC deficiencies. It is also used in compositions for tissue growth or
CC regeneration. The protein is also used in the treatment of osteoporosis
CC or osteoarthritis and in the treatment of periodontal disease and other
CC tooth repair processes. The protein is used in the treatment of nervous
CC system disorders such as Alzheimer's disease, Parkinson's disease, and
CC Huntington's disease. They are useful for protection or regeneration and
CC treatment of lung or liver fibrosis, reperfusion injury in various
CC tissues, and conditions resulting from systemic cytokine damage. They are
CC also used for promoting or inhibiting tissue differentiation. They are
CC also used as contraceptives since they exhibit activin or inhibin related
CC activities and as a fertility inducing therapeutic. They are used for
CC treating various coagulation disorders and in treatment and prevention of
CC conditions resulting from coagulation activities e.g. myocardial
CC infarction or stroke. They also acts as receptors, receptor ligands or
CC inhibitors or agonists of receptor/ligand interactions. They are used to
CC treat inflammatory conditions such as septic shock, sepsis, ischaemia
CC reperfusion injury, arthritis, and nephritis. They can be used to
CC prevent tumours.
XX
SQ Sequence 499 AA;

Query Match 20.5%; Score 359; DB 21; Length 499;
Best Local Similarity 30.1%; Pred. No. 3.5e-29;
Matches 87; Conservative 58; Mismatches 98; Indels 46; Gaps 11;

```
Qy      26 LVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFLGRVLEA 85
           |    : ||  || :|  :| |:    ::     |   |:|  || :: |:: |  | :|
Db       8 ltsaiifylaigaaifevleephwkeakknyytqklhllkefpclgqegldkilevvsda 67

Qy      86 SNYGVSVLSNAS-GNWNWDFTSALFFASTVLSTTGYGHTVPLSDGGKAFCIIYSVIGIPF 144
              :  ||::  | :  ||||   :|: ||:||::| |||:  | :  |: ||: | : |:|
Db      68 agqgvaitgnqtfnnwnw--pnamifaatvittigygnvapktpagrlfcvfyglfgvpl 125

Qy     145 TLLFLTAV-------VQRITVHVTRRPV---------LYFHIFWGFSKQVVAIVHAVLLG 188
            | :::|:        :|:   :|:| |             | ||       :|| |
Db     126 cltwisalgkffggrakrlgqfltkrgvslrkaqitctvifivwg------vlvhlv--- 176

Qy     189 FVTVSCFFFIPAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFRELYKIG 248
                 ||  || | |  ||::|  |: ||::|||| ||:| |   :  :  ||:
Db     177 ---------ippfvfmvte-gwnyieglyysfitistigfgdfvagvnpsanyhalyryf 226

Qy     249 ITCYLLLGL--IAMLV--VLETFCELHE-LKKFRKMFYVKKDKDEDQVH 292
           :  :: |||  ::: |   :  | |:|: :|| |:    :|:  |   |
Db     227 velwiylglawlslfvnwkvsmfvevhkaikkrrrr---rkesfessph 272
```

RESULT 14
Y87291
ID Y87291 standard; Protein; 394 AA.
XX
AC Y87291;
XX
DT 11-MAY-2000 (first entry)
XX
DE Human signal peptide containing protein HSPP-68 SEQ ID NO:68.
XX
KW Human; signal peptide-containing protein; HSPP; diagnosis; cancer;
KW inflammation; cardiovascular disease; anticancer; anti-inflammatory;
KW antimicrobial; nootropic; neuroprotective; cardiovascular; hepatotropic;
KW antiasthmatic; gene therapy; cell proliferation; neurological disorder;
KW reproductive disorder; developmental disorder; arteriosclerosis;
KW cirrhosis; psoriasis; acquired immune deficiency syndrome; anaemia;
KW asthma; Crohn's disease; infection; Alzheimer's disease; schizophrenia;
KW Parkinson's disease; Huntington's diseases; ovulatory defect;
KW muscular dystrophy.
XX
OS Homo sapiens.
XX
PN WO200000610-A2.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US14484.
XX
PR 26-JUN-1998; 98US-0090762.
PR 31-JUL-1998; 98US-0094983.
PR 01-OCT-1998; 98US-0102686.
PR 11-DEC-1998; 98US-0112129.
XX
PA (INCY-) INCYTE PHARM INC.
XX
PI Lal P, Tang YT, Gorgone GA, Corley NC, Guegler KJ, Baughn MR;
PI Akerblom IE, Au-Young J, Yue H, Patterson C, Reddy R, Hillman JL;
PI Bandman O;
XX
DR WPI; 2000-160673/14.
DR N-PSDB; Z98176.
XX
PT New human signal peptide-containing proteins useful in treatment,
PT prevention and diagnosis of e.g. cancer, inflammation and
PT cardiovascular disease -
XX
PS Claim 1; Page 207-208; 327pp; English.
XX
CC Z98109 to Z98242 encode Y87224 to Y87357 which represent the human
CC signal peptide-containing proteins HSPP-1 to HSPP-134. HSPPs have
CC anticancer, anti-inflammatory, antimicrobial, nootropic, hepatotropic,
CC neuroprotective, cardiovascular and antiasthmatic activities, and can
CC be used in gene therapy. HSPPs can be used to treat or prevent disorders
CC associated with decreased activity or function of HSPP. Antagonists of
CC HSPP are used to treat or prevent disorders associated with increased
CC activity or function of HSPP. Such diseases include cell proliferation
CC (including cancer), inflammation, cardiovascular, neurological,
CC reproductive or developmental disorders, (e.g. arteriosclerosis,
CC cirrhosis, psoriasis, acquired immune deficiency syndrome, anaemia,
CC asthma, Crohn's disease, microbial or other infections, congestive or
CC ischaemic heart disease, Alzheimer's, Parkinson's or Huntington's
CC diseases, schizophrenia, ovulatory defects, muscular dystrophy). HSPP
CC nucleic acids can be used for the recombinant production of HSPP, for
CC detecting HSPP in standard hybridisation and amplification assays (for
CC diagnosis and monitoring), in gene therapy, as antisense, triplex-forming
CC or ribozyme therapeutics, for detecting related sequences or genetic
CC variations, and for chromosomal mapping. HSPP are also used to raise
CC specific antibodies (Ab) and to screen for agonists and antagonists
CC (potential therapeutic agents). Ab are used to diagnose, or monitor,
CC HSPP-related diseases (in usual immunoassays), as therapeutic
CC antagonists, in competitive drug screens, and for purification of HSPP
CC from natural sources.
XX

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SQ   Sequence   394 AA;

  Query Match             18.3%;  Score 320.5;  DB 21;  Length 394;
  Best Local Similarity   32.4%;  Pred. No. 2.7e-25;
  Matches   90;  Conservative   47;  Mismatches  102;  Indels   39;  Gaps    9;

Qy      26 LVLGYLLYLVFGAVVFSSVELPYEDLLRQELRKLKRRFLEEHECLSEQQLEQFLGRVLEA 85
           |::    ||: || || ::|   | : || | :|::: |     ||:   |:    ||
Db      11 livctftyllvgaavfdalesepelierqrl-elrqqelrarynlsqggyeelervvlrl 69

Qy      86 SNYGVSVLSNASGNWNWDFTSALFFASTVLSTTGYGHTVPLSDGGKAFCIIYSVIGIPFT 145
             :   |         | |  : :|| ||::| |||| | :|||| ||: |:::||| |
Db      70 kphkagv--------qwrfagsfyfaitvittigyghaapstdggkvfcmfyallgiplt 121

Qy     146 LLFLTAVVQRIT------VHVTRRPVLYFHIRWGFSKQVVAIVHAVLLGFVTVSCFFFIP 199
           |:   :: :||       :|  :: :       |  :  |:: : ||:|| :      |
Db     122 lvmfqslgerintlvryllhrakkgl-------gmrradvsmanmvligffscistlcig 174

Qy     200 AAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEGYNQKFREL-----YKIGITCYLL 254
           || ||  |  | | :::|:|||:|:||| ||||      || : |     |      |:|
Db     175 aaafshye-hwtffqayyycfitlttigfgdyva----lqkdqalqtqpqyvafsfvyil 229

Qy     255 LGLIAMLVVLETFCELHELKKFRKMFYVKKDKDEDQVH 292
           |    | |:  |  |  |   | |    :|:  |  |
Db     230 tg----ltvigaflnlvvl---rfmtmnaedekrdaeh 260


RESULT  15
Y34126
ID   Y34126 standard; Protein; 197 AA.
XX
AC   Y34126;
XX
DT   30-NOV-1999  (first entry)
XX
DE   Human potassium channel K+Hnov2.
XX
KW   Potassium channel; ataxia; arrhythmia; epilepsy; Bartter's syndrome;
KW   cardiovascular disorder; CNS disorder; renal disorder.
XX
OS   Homo sapiens.
XX
PN   WO9943696-A1.
XX
PD   02-SEP-1999.
XX
PF   22-FEB-1999;   99WO-US03826.
XX
     19-JAN-1999;   99US-0116448.
     25-FEB-1998;   98US-0076687.
     07-AUG-1998;   98US-0095836.
XX
PA   (AXYS-) AXYS PHARM INC.
XX
PI   Curran ME,  Hu P,  Miller AP,  Rutter M,  Wang J;
XX
DR   WPI; 1999-527591/44.
DR   N-PSDB; Z11904.
XX
PT   New nucleic acids encoding mammalian K+Hnov potassium channel
PT   proteins, useful for the diagnosis and treatment of episodic ataxia
PT   with myokymia, cardiac arrhythmia, epilepsy and Bartter's syndrome
XX
PS   Claim 3; Page 67-68; 112pp; English.
XX
CC   This sequence represents the human K+Hnov2 potassium channel.
CC   K+Hnov proteins have a high degree of homology to known potassium
CC   channels and may be alpha subunits, which form the functional channel, or
CC   accessory subunits that act to modulate the channel activity. K+Hnov2 is
CC   a 4 transmembrane domain, 2 pore domain potassium channel. K+Hnov cDNAs
CC   were isolated by extension of expressed sequence tags (ESTs) which were
CC   related but not identical to known human potassium channels. Potential
CC   polymorphisms detected as sequence variants between multiple
CC   independent clones. Potassium channels have critical roles in various
CC   cell types and biochemical pathways. Defective potassium channels are
CC   known to cause four human diseases: episodic ataxia with myokymia;
CC   cardiac arrhythmia (long QT syndrome); epilepsy; and Bartter's syndrome.
CC   As potassium channels are critical components of virtually all cells,
CC   it is likely that abnormal potassium channels are also implicated in
CC   certain renal, cardiovascular and central nervous system (CNS) disorders.
CC   Nucleotides encoding K+Hnov proteins may be used for identifying
CC   homologous or related proteins and the DNA sequences encoding them. They
CC   may be used to produce compositions that modulate the expression and
CC   function of the K+Hnov protein and in studying the biochemical pathways
CC   associated with it. They may also be used for the recombinant production
CC   of K+Hnov protein in fermentation cultures. Additionally, such
CC   nucleotides may be used in gene therapy protocols for the treatment
CC   of diseases associated with abnormal potassium channels.
XX
SQ   Sequence   197 AA;

  Query Match             18.0%;  Score 315;  DB 20;  Length 197;
  Best Local Similarity   39.0%;  Pred. No. 4e-25;
  Matches   73;  Conservative   34;  Mismatches   76;  Indels    4;  Gaps    3;

Qy     125 PLSDGGKAFCIIYSVIGIPFTLLFLTAVVQRITVHVTRRPVLYFHIRWGFSKQVVAIVHA 184
           ||| |||||::|: :|:| :|  | | ::   : |  ||  :  : |  |    |:: |
Db       3 plspggkafcmvyaalglpasla-lvatlrhcllpvlsrprawvavhwqlsparaallqa 61

Qy     185 VLLGFVTVSCFFFIPAAVFSVLEDDWNFLESFYFCFISLSTIGLGDYVPGEG--YNQKFR 242
           | || :  | |  :|| |   |: | : | : |||| ||||||| | :|| |   :
Db      62 valgllvassfvllpalvlwglqgdcsllgavyfcfsslstigledllpgrgrslhpviy 121

Qy     243 ELYKIGITCYLLLGLIAMLVVLETFCELHELKKFRKMFYVKKD-KDEDQVHIIEHDQLSF 301
           | :: :  ||||||:|||:.:||| || :::   | |        |||  |:  |:|:
Db     122 hlgqlallgylllgllamllavetfselpqvramgkffrpsgpvtaedqggilgqdelal 181

Qy     302 SSITDQA 308
           |::   |
Db     182 stlppaa 188


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Job time: 35152 sec
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